ADEQ Inventory No. 511151 Permit No. AZ0026115
LTF No. 68160 Place ID No. 5135

AUTHORIZATION TO DISCHARGE UNDER THE ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Article 3.1; the Federal Water Pollution Control Act, (33 USC §1251 et. seq., as amended), and Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 9 and 10, and amendments thereto,

JBS Five Rivers Cattle Feeding LLC
McElhaney Feedyard
34673 E. County 9th Street
Wellton, Arizona 85356

is authorized to discharge stormwater mixed with manure, litter, and process wastewater from the McElhaney Feedyard concentrated animal feeding operation (CAFO) located at 34673 E. County 9th Street, Wellton, in Yuma County, Arizona at:

Latitude	Longitude	Legal
32° 41' 29" N	114° 03' 23" W	Township 8 S, Range 18 W, Section 36

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein, and in the attached "Standard AZPDES Permit Conditions."

Annual Registration Fee [A.R.S. 49-255.01 and A.A.C. R18-14-104]
The annual registration fee for this permit is payable to ADEQ each year. For the purposes of the annual fees, this permit is a Minor permit. If the facility is not yet constructed or is incapable of discharge at this time, the permittee may be eligible for reduced fees under rule. Send all correspondence requesting reduced fees to the Water Quality Division of ADEQ. Please reference the permit number, LTF number and why reduced fees are requested under rule.

This permit shall become effective on _____, 2017.

This permit and the authorization to discharge shall expire at midnight, _____, 2022.

Signed this _____ day of _____, 2017.

_____
Trevor Baggiore, Director
Water Quality Division
Arizona Department of Environmental Quality

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PART I. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

Note: Concentrated (or confined) animal feeding operations (CAFOs) are agricultural facilities that house and feed a large number of animals in a confined area for 45 days or more during any 12-month period. See definitions in Appendix A.

A. Discharge Limitations and Operational Requirements – CAFO Production Areas

The permittee shall not discharge any manure, litter, or process wastewater into waters of the U.S from the production area, except as provided in Section A.1 below.

1. Whenever precipitation causes an overflow of manure, litter, or process wastewater, pollutants in the overflow may be discharged into U.S. waters provided:

   (a) The production area is designed, constructed, operated and maintained to contain all manure, litter and process wastewater including the runoff and the direct precipitation from a 25-year, 24-hour rainfall event; and

   (b) The production area is operated in accordance with the additional measures and records required by Part I.A.2 and 3.

2. The permittee shall implement the terms of a site-specific nutrient management plan (NMP) as specified below and in Part II of this permit.

3. The permittee shall implement the following practices and procedures for the CAFO production areas:

   a. Install a depth marker in all liquid impoundments which clearly indicates the minimum capacity necessary to contain the direct precipitation and runoff resulting from the 25-year, 24-hour rainfall event;

   b. Perform weekly visual inspections of all stormwater diversion devices, run-on/runoff diversion structures, and devices channeling contaminated stormwater to the wastewater and manure storage and containment structure(s);

   c. Perform daily visual inspections of all water lines, including drinking water and cooling water lines;

   d. Perform weekly inspections of the manure, litter, and process wastewater impoundments and record the level by use of the installed depth marker as required in Section 3.a, above;

e. Correct any deficiencies that are identified in daily and weekly inspections as soon as possible. Deficiencies not corrected within 30 days shall be accompanied by an explanation of the factors preventing immediate correction (see Part III.C.1.b.iii);

f. Ensure proper disposal of animal mortalities so as to prevent any discharge of pollutants to a waters of the U.S. Animal mortalities shall not be disposed of in any liquid manure, stormwater, or process wastewater system that is not specifically designed to treat animal mortalities;

g. Complete on-site records documenting implementation of the above practices and procedures shall be maintained as specified in Part III.C.

B. Discharge Limitations and Operational Requirements – Land Application Areas

1. The discharge of manure, litter or process wastewater to waters of the United States as a result of the application of manure, litter or process wastewater to land areas under the control of the permittee is prohibited except where it is an agricultural storm water discharge (see definitions in Appendix A, Part B). There shall be no dry weather discharges from land application areas.

2. The permittee shall implement the terms of the site-specific NMP below and in Appendix B and in Part II of this permit.

a. Application rates for manure, litter, and process wastewater applied to land under the operational control or ownership of the CAFO shall minimize phosphorus and nitrogen transport from the field to surface waters in compliance with the NRCS, AZ May 2012 version of the USDA Natural Resources Conservation Service (NRCS), Field Office Technical Guide for the State of Arizona, Conservation Practice Standard - Nutrient Management Code 590 (NRCS Nutrient Management Code 590).

b. Manure must, at a minimum, be analyzed for nitrogen, phosphorus, potassium, and moisture content. In those cases where manure analysis cannot be readily obtained, acceptable NRCS and/or University of Arizona "book values" may be used for planning purposes. Acceptable values may be found in the Agricultural Waste Management Field Handbook (AWMFH), Chapter 4 – Agricultural Waste Characteristics.

c. Equipment used for land application of manure, litter, or process wastewater shall be inspected periodically for leaks;

d. No application of manure, litter, and process wastewater shall occur within 100 feet of any downgradient surface water, open tile line intake structures, sinkholes, agricultural well heads, or other conduits to surface waters. Instead of the 100-foot setback, the permittee may use a 35-foot vegetated buffer where applications of manure, litter or process wastewater are prohibited or demonstrate implementation of alternative conservation

practices or field-specific conditions that will provide pollutant reductions equivalent to or better than the reductions that would be achieved by the 100-foot setback; and

e. Complete on-site records documenting implementation of all required practices and procedures shall be maintained as specified in Part III.C.

C. Monitoring Requirements for All Discharges from Manure and Wastewater Storage and Handling Structures

In the event of any overflow or discharge of pollutants from a manure and/or wastewater storage or retention structure, the permittee shall:

1. Record an estimate of the volume of the discharge and the date and time of the occurrence.

2. Collect grab samples of the wastewater or discharge released from the storage or retention structure. Each sample shall be analyzed for the following parameters, at a minimum:

- total nitrogen
- total phosphorus
- *E. coli*
- biochemical oxygen demand – 5 day (BOD5)
- total suspended solids

The sample shall be collected and analyzed using an appropriate method in accordance with A.A.C. R18-9-A905(B) (see Part III.A).

3. The permittee shall collect a minimum of one sample from the initial discharge within 30 minutes or as soon as conditions allow. The sample(s) shall be representative of the discharge. The permittee shall submit the sampling results to the Department within 30 days of receipt of the results.

4. If conditions are not safe for sampling, provide documentation of why samples could not be collected. For example, the permittee may be unable to collect samples during dangerous weather conditions. However once dangerous conditions have passed, the permittee shall collect a sample from the actual overflow or retention structure (pond or lagoon) from which the discharge occurred.

D. Requirements Relating to Transfer of Manure or Process Wastewater to Other Persons.

Prior to transferring manure, litter or process wastewater to other persons, the permittee shall provide the recipient of the manure, litter or process wastewater with the most current nutrient analysis. The analysis provided shall be consistent with the

requirements within Part III.A.4 or Part III.B of this permit. The permittee shall retain records of the date, recipient name and address, and approximate amount of manure, litter or process wastewater transferred to another person for five years.

E. Narrative Standards (Water Quality-Based Standards)

The permittee shall control discharges from the facility as necessary to not cause or contribute to an exceedance of an applicable water quality standard. Compliance with other conditions in this permit is expected to control discharges as necessary to not cause or contribute to an exceedance of the applicable water quality standards at A.A.C. R18-11-108. If at any time the permittee becomes aware, or ADEQ determines, that discharges cause or contribute to an exceedance of an applicable water quality standard, the permittee shall take appropriate corrective actions (see Part III.C.4) to bring the facility into compliance with this permit.

PART II. NUTRIENT MANAGEMENT PLAN REQUIREMENTS

A. The permittee shall implement and consistently maintain the site-specific terms of the NMP in Appendix B of this permit that meet all the general land application and NMP requirements in this permit. The NMP shall specifically identify and describe practices and procedures that will be implemented to ensure compliance with the discharge limitations and other conditions of this permit set forth in this part and in Part I, Sections A and B. The NMP shall be developed in accordance with the technical standards identified in the Arizona NRCS Nutrient Management Code 590.

B. The NMP shall contain best management practices necessary to meet the following requirements, as applicable:

1. Ensure effective storage measures are in place to protect water quality including:

    a. Maintain sufficient capacity in liquid manure, wastewater, and stormwater storage structures to ensure compliance with all permitting requirements including capacity to allow the land application of manure, litter or process wastewater in accordance with Arizona NRCS Nutrient Management Code 590;

    b. Store dry manure within the drainage area of a retention pond or place a berm around the manure stockpile to contain any polluted runoff; and

    c. Ensure proper operation and maintenance of all manure, wastewater, and stormwater storage facilities including waste ponds and lagoons and other containment structures such as tanks (above and below ground).

2. Ensure proper disposal of animal mortalities so as to prevent any discharge of pollutants to a waters of the U.S. Animal mortalities shall not be disposed of in

any liquid manure, stormwater, or process wastewater system that is not specifically designed to treat animal mortalities;

3. Design and implement management practices to divert stormwater run-on from the production area. If stormwater run-on is not prevented from coming into contact with manure or process wastewater it shall be collected and handled in accordance with the requirements in Section 1.a, above;

4. Develop and implement appropriate controls to prevent direct access of confined animals to waters of the U.S.;

5. Implement controls to prevent the inappropriate introduction of chemicals and other contaminants into the manure, litter, process wastewater, or stormwater storage and or treatment system unless specifically designed to treat such chemicals and other contaminants;

6. For production and land application areas, develop and implement setbacks, buffer strips, berms, or other equivalent practices in accordance with Section I.B.2.d that are sufficient to control runoff of pollutants to waters of the U.S.;

7. Identify and implement protocols for appropriate testing of manure, litter, process wastewater, and soil in accordance with Section I.B.2. At a minimum, the NMP shall specify the collection and analysis of manure, litter, and process wastewater samples annually for nutrient content including nitrogen and phosphorus. The NMP shall specify the collection and analysis of soil samples for phosphorus content at least once every five years for all fields under the control of the permittee where manure, litter, and process wastewater may be applied. If organic sources of fertilizers are used two or more consecutive years, annual soil testing is required;

8. Establish protocols to land apply manure and wastewater in accordance with the Arizona NRCS Nutrient Management Code 590 for site-specific nutrient management. The application rate calculation shall address the form, source, amount, timing and method of application on each field to achieve realistic production goals while minimizing nitrogen and phosphorus movement to surface waters. The rate calculation shall be based on a field-specific assessment of the potential for nitrogen and phosphorus transport from the field, and allow appropriate flexibilities to implement nutrient management practices to comply with the applicable technical standards.

    a. The NMP shall specify the following:

        i. the fields available for land application;
        ii. field-specific rates of application properly developed as specified in Section 8.b.i or Section 8.b.ii below to ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater;

iii. the information specified in Section 8.b.i or ii below for the selected approach; and
iv. any timing limitations identified in the NMP concerning land application on the fields available for land application.

b. The permittee shall determine rates of land application using one of the following two approaches:

i. Linear Approach

If using the linear approach, the permittee shall determine the maximum application rates for each year of permit coverage, for each crop identified in the NMP, in the appropriate chemical forms, in pounds per acre, per year, for each field to be used for land application.

The factors used to determine the application rates shall include, at a minimum:

- the outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field;
- the crops to be planted in each field and the uses for each field;
- the realistic yield goal for each crop or use identified for each field;
- the nitrogen and phosphorus recommendations for each crop or use identified for each field;
- credits for all nitrogen in the field that will be plant available;
- consideration of multi-year phosphorus application;
- accounting for all other additions of plant available nitrogen and phosphorus to the field;
- the form and source of manure, litter, and process wastewater to be land-applied;
- the timing and method of land application; and
- the methodology by which the nutrient management plan accounts for the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied.

If using the linear approach, the permittee shall calculate the maximum amount of manure, litter and process wastewater to be land applied at least once each year using the results of the most recent representative manure, litter, and process wastewater tests for nitrogen and phosphorus taken within 12 months of the date of land application for each crop.

ii. Narrative Approach

If using the narrative approach, the permittee shall express rates of

application as a narrative rate of application that results in the amount, in tons or gallons, of manure, litter, and process wastewater to be land applied. The permittee using this approach shall calculate maximum amounts of manure, litter, and process wastewater to be land applied at least once each year before applying manure, litter and process wastewater. See the calculation worksheets in Appendix B.

The terms include maximum amounts of nitrogen and phosphorus derived from all sources of nutrients, for each crop identified in the nutrient management plan, in the appropriate chemical forms, in pounds per acre, for each field, and certain factors necessary to determine such amounts. The factors that are terms shall include:

- the outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field;
- the crops to be planted in each field or any other uses such as pasture or fallow fields (including alternative crops identified);
- the realistic yield goal for each crop or use identified for each field; and
- the nitrogen and phosphorus recommendations for each crop or use identified for each field;
- The methodology by which the NMP accounts for the following factors when calculating the amounts of manure, litter, and process wastewater to be land applied:
    - results of soil tests conducted in accordance with protocols identified in the NMP;
    - credits for all nitrogen in the field that will be plant available;
    - the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied;
    - consideration of multi-year phosphorus application;
    - accounting for all other additions of plant available nitrogen and phosphorus to the field;
    - the form and source of manure, litter, and process wastewater;
    - the timing and method of land application; and
    - volatilization of nitrogen and mineralization of organic nitrogen.

- alternative crops that are not in the planned crop rotation, listed by field with realistic crop yield goals and nitrogen and phosphorus recommendations for each crop or use identified for that field.

If using the narrative approach, the following projections shall be included in the NMP but are not terms of the NMP:

- the planned crop rotations for each field for the period of permit coverage;
- the projected amount of manure, litter, or process wastewater to be applied;
- projected credits for all nitrogen in the field that will be plant available;
- consideration of multi-year phosphorus application;
- accounting for all other additions of plant available nitrogen and phosphorus to the field;
- the predicted form, source, and method of application of manure, litter, and process wastewater for each crop; and
- the timing of application for each field,

If using the narrative approach, the permittee shall calculate the maximum amounts of manure, litter, and process wastewater to be land applied at least once each year using the above methodology before land applying manure, litter, and process wastewater and must rely on the following data:

- A field-specific determination of soil levels of nitrogen and phosphorus, including, for nitrogen, a concurrent determination of nitrogen that will be plant available consistent with the methodology, and for phosphorus, the results of the most recent soil test conducted in accordance with soil testing requirements in the Arizona NRCS Nutrient Management Code 590; and
- the results of the most recent representative manure, litter, and process wastewater tests for nitrogen and phosphorus taken within 12 months of the date of land application, in order to determine the amount of nitrogen and phosphorus in the manure, litter, and process wastewater to be applied.

9. Maintain and document all records for implementation and management of the practices and procedures described in the NMP and Part I. Sections A and B.

10. The NMP shall be signed by the owner/operator or other signatory authority in accordance with Section 2 of Appendix C, Standard Conditions.

C. Deficiencies/Changes in the NMP

1. If the NMP in Appendix B is revised, the permittee shall provide a copy of the most current version of the NMP to ADEQ and identify all changes to the NMP from the previous version, except that calculations of application rates for manure, litter, and wastewater are not required to be provided. Any changes made to the attached NMP shall be consistent with the requirements specified in this permit.

2. ADEQ may notify the permittee at any time that the NMP does not meet one or more of the requirements of this permit. The notification shall identify the

provisions of this permit that are not being met and parts of the NMP that require modification. ADEQ shall specify the compliance timeframe within the notification. The permittee shall make the required changes to the NMP and submit a copy of the revised NMP to ADEQ. ADEQ may request applicable corrective actions as necessary to ensure the period of non-compliance with the approved NMP have not increased the risk of nitrogen and phosphorus transport to the water of the U.S.

NOTE: If the deficiencies require modifying a BMP or adding additional BMPs or structural practices to accommodate BMP changes, the changes to the NMP shall be made by a qualified person certified to develop NMPs, including conservation planners with USDA-NRCS, agronomists certified by the American Society of Agronomy (ASA), Certified Crop Advisors certified by the ASA Certified Crop Advisor Program, or planners certified by the State of Arizona Nutrient Management Planning Certification Program.

PART III. MONITORING, REPORTING, AND RECORDKEEPING REQUIREMENTS

A. Sample Collection and Analysis Requirements for Discharge Monitoring

1. The permittee is responsible for the quality and accuracy of all data required under this permit.

2. Quality Assurance Manual

The permittee shall develop and maintain a Quality Assurance Manual (QA Manual) on site that describe the sample collection and analysis procedures that will be followed if a discharge occurs. The QA Manual shall be available for review by ADEQ upon request. The QA Manual shall be updated as necessary to reflect current conditions, and shall describe the following:

a. Project Management, including:

- Who will collect samples and their qualifications;
- When and where samples will be collected;
- How samples will be collected;
- Pollutants or analytes being measured;
- Laboratory(s) that will perform analyses; and
- Any field tests to be conducted (detail methods and specify equipment, including a description of any needed calibrations);

b. Standard Operating Procedures (SOPs) for Sample Collection, including:

- Equipment to be used;
- Calibration requirements and frequency of calibrations for field testing equipment, if any, and how these calibrations will be documented;

- Number and location of samples to be taken to ensure representative samples are consistently obtained;
- Type and number of QA/QC samples to be collected (i.e., background samples, duplicates, and equipment or field blanks);
- Types, sizes, and number of sample containers needed;
- Preservatives and holding times for the samples (see methods specified in 40 CFR 503.8, July 1, 2001 edition, or any condition within this permit that specifies a particular test method.); and
- Chain of custody procedures;

c. How the permittee will perform data review; complete records used to report results to ADEQ; and resolve data quality issues.

3. Sample collection, preservation and handling shall be performed on solids, liquid, and hazardous waste as established in A.A.C. R9-14-612 and R9-14-613. The permittee shall outline the proper procedures in the SOPs, and samples taken to meet the monitoring requirements in this permit shall conform to these procedures whether collection and handling is performed directly by the permittee or contracted to a third-party.

4. Analytical requirements

a. The permittee shall use a laboratory licensed by the ADHS Office of Laboratory Licensure and Certification that has demonstrated proficiency within the last 12 months under R9-14-609, for each parameter to be sampled under this permit.

b. The permittee must utilize analytical methods specified in this permit. If no test procedure is specified, the permittee shall analyze the pollutant using:

i. A test procedure listed in 40 CFR 136 which is also approved under A.A.C. R9-14-610;
ii. An alternative test procedure approved by EPA as provided in 40 CFR 136 and which is also approved under A.A.C. R9-14-610;
iii. A test procedure listed in 40 CFR 136, with modifications allowed by EPA or approved as a method alteration by ADHS under A.A.C. R9-14-610(C); or
iv. If no test procedure for a pollutant is available under (4)(b)(i) through (4)(b)(iii) above, any Method approved under A.A.C. R9-14-610(C) for wastewater may be used, except the use of field kits is not allowed unless otherwise specified in this permit. If there is no approved wastewater method for a parameter, any other method identified in 9 A.A.C. 14, Article 6 that will achieve appropriate detection and reporting limits may be used for analyses.

c. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods.

B. Soil, Manure, Process Wastewater and Tissue Sampling and Analysis Requirements

All testing conducted for the purpose of nutrient management shall be consistent with the Arizona NRCS Nutrient Management Code 590. Soil, manure, process wastewater, and tissue sampling and analysis shall be conducted in accordance with land grant university guidance, or industry practice, if recognized by the university. Soil testing analyses shall be performed by laboratories successfully meeting the requirements and performance standards of the North American Proficiency Testing Program - Performance Assessment Program (NAPT-PAP) under the auspices of the Soil Science Society of America and NRCS, or other equivalent NRCS-approved program. Manure testing shall meet or exceed the requirements and performance standards of the Manure Testing Laboratory Certification Program under the auspices of the Minnesota Department of Agriculture, or other equivalent NRCS-approved program.

C. Recordkeeping Requirements

1. Recordkeeping Requirements for the CAFO Production Area

The permittee shall create, maintain for five years, and make available to the ADEQ, upon request, all the information submitted as part of the permit application and the following records:

a. The information required to document the implementation and management of the minimum elements of the NMP as specified in Part I.B;

b. Records documenting the requirements and inspections specified in Part I.A including:

i. Records documenting the visual inspections required by Part I.A;

ii. weekly records of the depth of the manure and process wastewater in the liquid impoundment as indicated by the depth marker;

iii. Records documenting any actions taken to correct deficiencies. Deficiencies not corrected within 30 days shall be accompanied by an explanation of the factors preventing immediate correction;

iv. Records of mortalities management and practices used by the permittee;

v. Records documenting the current design of any manure, process wastewater or litter storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of days of storage capacity; and

vi. Records of the date, time, and estimated volume of any overflow.

2. Recordkeeping Requirements for the Land Application Areas.

The permittee shall create, maintain for five years, and make available to the ADEQ, upon request, the following records:

a. A copy of the permittee's current site-specific NMP.

b. The information required by Part I, Sections B, D and E of this permit, including the following:

i. Expected crop yields;
ii. The date(s) manure, litter, or process waste water is applied to each field;
iii. Weather conditions at time of application and for 24 hours prior to and following application;
iv. Test methods used to sample and analyze manure, litter, process waste water, and soil;
v. Results from manure, litter, process waste water, and soil sampling;
vi. Explanation of the basis for determining manure application rates, as provided in Arizona NRCS Nutrient Management Code 590. NMPs require that the N and P application rates be determined. The "P" screening tool will be used to determine if the critical element is either nitrogen or phosphorous. If the screening tool indicates that phosphorous is critical, then the nutrient plan will be phosphorous based. All other plans will be nitrogen based;
vii. Calculations showing the total nitrogen and phosphorus to be applied to each field, including sources other than manure, litter, or process wastewater;
viii. Total amount of nitrogen and phosphorus actually applied to each field, including documentation of calculations for the total amount applied;
ix. The method used to apply the manure, litter, or process wastewater; and
x. Date(s) of manure application equipment inspection.

3. Recordkeeping requirements for transfer of manure or process wastewater to other persons

The permittee shall retain records of the date, recipient name and address and approximate amount of manure, litter or process wastewater transferred to another person for five years.

i. Documentation of Corrective Action

a. Within 72 hours of discovery that a discharge may have contributed to an exceedance of an applicable water quality standard (see Part I.E), the permittee shall document the following information, which shall be maintained with the site-specific NMP:

i. Identification of the condition triggering the need for corrective action review;
ii. Description of the problem identified; and
iii. Date the problem was identified.

b. Within 14 calendar days of discovery that a discharge may have contributed to an exceedance of an applicable water quality standard (see Part I.E), the permittee shall document and maintain with the site-specific NMP the following information:

i. Summary of the corrective action(s) taken or to be taken;
ii. Whether revisions to the site-specific NMP are required as a result of this discovery or corrective action;
iii. Date corrective action initiated or will be initiated; and
iv. Date corrective action completed or expected to be completed.

c. When any discharge occurred and necessary corrective actions taken as described in Section Part III.C.4.a and b, above, the permittee shall submit this documentation in the annual report as required in Part III.F and retain a copy of the corrective action report on site with the site-specific NMP as required in Part III.C.4.a and b.

D. Inspections

1. The permittee shall perform the necessary inspections as described in Part I.A.

2. For each inspection, the permittee shall prepare an inspection report or maintain an inspection log. At a minimum the report/log shall include:

a. The inspection date;

b. Name of person(s) making the inspection;

c. Date of each precipitation event, estimated time precipitation event began, estimated time precipitation event ended, and approximate amount of precipitation for each event (in inches);

d. Location(s) of discharges of pollutants from the site;

e. Location(s) and identification of BMPs that need to be maintained; failed to operate as designed or prove inadequate;

f. Location(s) where additional BMPs are needed; and

g. Corrective actions required, including any changes to NMP necessary and implementation dates.

3. The permittee shall ensure the inspection report and record of any follow-up actions taken is retained as part of the NMP for five years from the date the record was created. Inspection reports shall identify any non-compliance with the conditions of this permit. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the CAFO is being operated in compliance with the site-specific terms of the NMP in Appendix B and this permit. The report shall be signed in accordance with Section 2 of the Standard Conditions in Appendix C of this permit.

4. Based on the results of the daily or weekly inspections, the permittee shall correct any problems identified by the inspections, and modify the NMP to include additional or modified BMPs designed to correct problems identified. The permittee shall complete corrections to the identified problems as soon as possible following the inspection. If existing BMPs need to be modified or if additional BMPs are necessary, the permittee shall modify the NMP and implement the new or modified NMP as soon as practicable. Deficiencies not corrected within 30 days shall be accompanied by an explanation of the factors preventing immediate correction (see Part III.C.1.b.iii);

E. Twenty-four Hour Reporting of Noncompliance

1. The permittee shall orally report any noncompliance which may endanger the environment or human health within 24 hours from the time the permittee becomes aware of the event to:

ADEQ 24 hour hotline at 602-771-2330

The permittee shall notify the ADEQ AZPDES Individual Permits Unit office in writing within 5 days of the noncompliance event. The permittee shall include in the written notification: a description of the noncompliance and its cause; the period of noncompliance, including dates and times, and, if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

2. If, for any reason, there is a discharge from a manure, wastewater, or stormwater storage and handling structures to a water of the U.S., the permittee shall notify ADEQ orally within 24 hours and in writing within five (5) working days of the discharge from the CAFO as described in Section E.1 above. In addition, the permittee shall keep a copy of the notification submitted to ADEQ together with the other records required by this permit. The discharge notification shall include the following information:

a. Description of the discharge: A description of the discharge and its cause, including a description of the flow path to the water of the U.S. and an estimate of the volume discharged.

b. Time of the discharge: The period of non-compliance, including exact dates and times, the anticipate time it is expected to continue, and steps taken or planned to reduce, eliminate and prevent recurrence of the discharge.

F. Annual Reporting Requirements

By February 19 of each year, the permittee shall submit an annual report to ADEQ at the address provided in Part III.G below, or by any other alternative mode as specified by ADEQ to satisfy the Federal e-reporting Rule. The e-reporting Rule requires that this report be submitted electronically by February 19, 2021 (for year 2020). The annual report shall include:

1. The number and type of animals, whether in open confinement or housed under roof ;

2. An estimated amount of total manure, litter and process wastewater generated by the animal feeding operation in the previous 12 months (tons or gallons);

3. An estimated amount of total manure, litter and process wastewater transferred to other person by the permittee in the previous 12 months (tons or gallons);

4. The total number of acres for land application covered by the nutrient management plan;

5. The total number of acres under control of the permittee that were used for land application of manure, litter and process wastewater in the previous 12 months;

6. For those fields used for land application of manure, litter and process wastewater in the previous 12 month:

   a. the actual crop(s) planted and actual yield(s) for each field;

   b. the actual nitrogen and phosphorus content of the manure, litter, and process wastewater applied;

   c. the calculated maximum amount of manure, litter, and process wastewater to be land applied as determined using either the linear approach or the narrative approach; and

   d. the amount of the manure, litter, and process water applied to each field during the last 12 months, and

e. if the NMP addresses rates of application using the narrative approach:

i. the results of any soil testing for nitrogen and phosphorus taken during the preceding 12 months;
ii the data used to calculate the maximum amount of manure, litter, and process wastewater to be land applied; and
iii. the amount of any supplemental fertilizer applied during the previous 12 months;

7. A summary of all manure, litter and process wastewater discharges from the production area that have occurred in the previous 12 months, including date, time, and approximate volume; and

8. Documentation of any corrective action as required in Part III.C.4.c.

9. A statement indicating whether the current version of the NMP was developed or approved by a qualified person (see Part II.C.2) certified to develop NMPs as described in Part II.C.2.

G. Reporting Location

All reports required or written correspondence concerning discharges covered under this permit, shall be sent to ADEQ at the address specified below or submitted by any other alternative mode as specified by ADEQ:

ADEQ
AZPDES Individual Permits Unit
1110 W. Washington St.
Phoenix, AZ 85007
602-771-4509

Electronic reporting to: AZPDES@azdeq.gov

PART IV. CLOSURE REQUIREMENTS

A. The permittee shall submit a closure plan to ADEQ for approval 90 days before ceasing operation. The closure plan shall describe the following:

1. The approximate quantity of manure, process wastewater and other materials and contaminants to be removed from the facility;

2. The destination of the materials to be removed from the facility and documentation the destination is approved to accept the materials;

3. The method to be used to treat any material remaining at the facility;

4. The method to be used to control the discharge of pollutants from the facility;

5. Any limitations on future land or water uses created as a result of the facility's operations or closure activities;

6. A schedule for implementation of the closure plan; and

7. Any other relevant information ÁDEQ determines to be necessary.

B. The permittee shall provide ADEQ with written notice that the closure plan has been fully implemented with 30 calendar days of completion and before redevelopment.

PART V. SPECIAL CONDITIONS

A. REOPENER

This permit may be modified per the provisions of A.A.C. R18-9-B906, and R18-9-A905 which incorporates 40 CFR Part 122. This permit may be reopened based on newly available information, based on changes to the NMP that are considered substantial as defined in Appendix A, Part B; or to add conditions or limitations to ensure compliance with the applicable regulatory requirements.

APPENDIX A

STANDARD AZPDES PERMIT CONDITIONS & NOTIFICATIONS
(Updated as of February 2, 2004)

1. Duty to Reapply [R18-9-B904(C)]

Unless the Permittee permanently ceases the discharging activity covered by this permit, the Permittee shall submit a new application 180 days before the existing permit expires.

2. Applications [R18-9-A905(A)(1)(c) which incorporates 40 CFR 122.22]

a. All applications shall be signed as follows:

1) For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

A) A president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

B) The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

3) For a municipality, State, Federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (i) The chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

b. All reports required by permits and other information requested by the Director shall be signed by a person described in paragraph (a) of this Section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1) The authorization is made in writing by a person described in paragraph (a) of this section;

2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative

may thus be either a named individual or any individual occupying a named position.) and,

3) The written authorization is submitted to the Director.

c. Changes to Authorization. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

d. Certification. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

3. Duty to Comply [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(a)(i) and A.R.S. §49- 262, 263.01, and 263.02.]

a. The Permittee shall comply with all conditions of this permit and any standard and prohibition required under A.R.S. Title 49, Chapter 2, Article 3.1 and A.A.C. Title 18, Chapter 9, Articles 9 and 10. Any permit noncompliance constitutes a violation of the Clean Water Act; A.R.S. Title 49, Chapter 2, Article 3.1; and A.A.C. Title 18, Chapter 9, Articles 9 and 10, and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or denial of a permit renewal application.

b. The issuance of this permit does not waive any federal, state, county, or local regulations or permit requirements with which a person discharging under this permit is required to comply.

c. The Permittee shall comply with the effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Clean Water Act within the time provided in the regulation that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

d. Civil Penalties. A.R.S. § 49-262(C) provides that any person who violates any provision of A.R.S. Title 49, Chapter 2, Article 3.1 or a rule, permit, discharge limitation or order issued or adopted under A.R.S. Title 49, Chapter 2, Article 3.1 is subject to a civil penalty not to exceed $25,000 per day per violation.

e. Criminal Penalties. Any a person who violates a condition of this permit, or violates a provision under A.R.S. Title 49, Chapter 2, Article 3.1, or A.A.C. Title 18, Chapter 9, Articles 9 and 10 is subject to the enforcement actions established under A.R.S. Title 49, Chapter 2, Article 4,

which may include the possibility of fines and/or imprisonment.

4. Need to Halt or Reduce Activity Not a Defense [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(c)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(d)]

The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(e)]

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

7. Permit Actions [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(f)]

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

8. Property Rights [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(g)]

This permit does not convey any property rights of any sort, or any exclusive privilege.

9. Duty to Provide Information [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(h)]

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

10. Inspection and Entry [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(i)]

The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and such other documents as may be required by law, to:

a. Enter upon the Permittee's premises where a regulated facility or activity is located or

conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the terms of the permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring equipment or control equipment), practices or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by A.R.S. Title 49, Chapter 2, Article 3.1, and A.A.C. Title 18, Chapter 9, Articles 9 and 10, any substances or parameters at any location.

11. Monitoring and Records [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(j)]

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application, except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503). This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

1) The date, exact place and time of sampling or measurements;

2) The individual(s) who performed the sampling or measurements;

3) The date(s) the analyses were performed;

4) The individual(s) who performed the analyses;

5) The analytical techniques or methods used; and

6) The results of such analyses.

d. Monitoring must be conducted according to test procedures specified in this permit. If a test procedure is not specified in the permit, then monitoring must be conducted according to test procedures approved under A.A.C. R18-9-A905(B) including those under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 (for sludge).

e. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained in this permit shall,

upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both for first conviction. For a second conviction, such a person is subject to a fine of not more than $20,000 per day of violation, or imprisonment for not more than four years, or both.

Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained in this permit is subject to the enforcement actions established under A.R.S. Title 49, Chapter 2, Article 4, which includes the possibility of fines and/or imprisonment.

12. Signatory Requirement [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(k)]

a. All applications, reports, or information submitted to the Director shall be signed and certified. (See 40 CFR 122.22 incorporated at R18-9-A905(A)(1)(c))

b. The CLEAN WATER ACT provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both for a first conviction. For a second conviction, such a person is subject to a fine of not more than $20,000 per day of violation, or imprisonment of not more than four years, or both.

13. Reporting Requirements [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(l)]

a. Planned changes. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations of additions to the permitted facility. Notice is required only when:

1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b) (incorporated by reference at R18-9-A905(A)(1)(e)); or

2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1) (incorporated by reference at R18-9-A905(A)(3)(b)).

3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Anticipated noncompliance. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. Transfers. (R18-9-B905) This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under Arizona Revised Statutes and the Clean Water Act.

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

2) If the Permittee monitors any pollutant more frequently than required by the permit, then the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR, or sludge reporting form specified by the Director.

3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

f. Twenty-four hour reporting.

1) The Permittee shall report any noncompliance which may endanger human health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

2) The following shall be included as information which must be reported within 24 hours under this paragraph.

a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR 122.41(g) which is incorporated by reference at R18-9-A905(A)(3)(a))

b) Any upset which exceeds any effluent limitation in the permit.

c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. (See 40 CFR 122.44(g) which is incorporated by reference at R18-9-A905(A)(3)(d))

g. Other noncompliance. The Permittee shall report all instances of noncompliance not reported

under paragraphs (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this section.

h. Other information. Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

14. Bypass [R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(m)]

a. Definitions

1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Bypass not exceeding limitations. The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of paragraphs (c) and (d) of this section.

c. Notice.

1) Anticipated bypass. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of bypass.
2) Unanticipated bypass. The Permittee shall submit notice of an unanticipated bypass as required in paragraph (f)(2) of section 13 (24-hour notice).

d. Prohibition of bypass.

1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c) The Permittee submitted notices as required under paragraph (c) of this section.

2) The Director may approve an anticipated bypass, after considering its adverse effects, if the

Director determines that it will meet the three conditions listed above in paragraph (d)(1) of this section.

15. Upset [A.R.S.§§49-255(8) and 255.01(E), R18-9-A905(A)(3)(a) which incorporates 40 CFR 122.41(n)]

a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (c) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. Conditions necessary for a demonstration of upset. A Permittee who wishes to establish the affirmative defenses of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1) An upset occurred and that the Permittee can identify the cause(s) of the upset;

2) The permitted facility was at the time being properly operated; and

3) The Permittee submitted notice of the upset as required in paragraph (f)(2) of Section 13 (24-hour notice).

4) The Permittee has taken appropriate measure including all reasonable steps to minimize or prevent any discharge or sewage sludge use or disposal that is in violation of the permit and that has a reasonable likelihood of adversely affecting human health or the environment per A.R.S. § 49-255.01(E)(1)(d)

d. Burden of proof. In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

16. Existing Manufacturing, Commercial, Mining, and Silvicultural Dischargers [R18-9-A905(A)(3)(b) which incorporates 40 CFR 122.42(a)]

In addition to the reporting requirements under 40 CFR 122.41(l) (which is incorporated at R18-9-A905(A)(3)(a)), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

1) One hundred micrograms per liter (100 µg/l);

2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7) (which is incorporated at R18-9-A905(A)(1)(b)); or

4) The level established by the Director in accordance with 40 CFR 122.44(f) (which is incorporated at R18-9-A905(A)(3)(d)).

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

1) Five hundred micrograms per liter (500 µg/l);

2) One milligram per liter (1 mg/l) for antimony;

3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7)(which is incorporated at R18-9-A905(A)(1)(b));

4) The level established by the Director in accordance with 40 CFR 122.44(f) (which is incorporated at R18-9-A905(A)(3)(d)).

17. Publicly Owned Treatment Works [R18-9-A905(A)(3)(b) which incorporates 40 CFR 122.42(b)]

This section applies only to publicly owned treatment works as defined at ARS § 49-255(5).

a. All POTW's must provide adequate notice to the Director of the following:

1) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the CLEAN WATER ACT if it were directly discharging those pollutants; and

2) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

3) For the purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharge from the POTW.

Publicly owned treatment works may not receive hazardous waste by truck, rail, or dedicated pipe

except as provided under 40 CFR 270. Hazardous wastes are defined at 40 CFR 261 and include any mixture containing any waste listed under 40 CFR 261.31 - 261.33. The Domestic Sewage Exclusion (40 CFR 261.4) applies only to wastes mixed with domestic sewage in a sewer leading to a publicly owned treatment works and not to mixtures of hazardous wastes and sewage or septage delivered to the treatment plant by truck.

18. Reopener Clause [R18-9-A905(A)(3)(d) which incorporates 40 CFR 122.44(c)]

This permit shall be modified or revoked and reissued to incorporate any applicable effluent standard or limitation or standard for sewage sludge use or disposal under sections 301(b)(2)(C), and (D), 304(b)(2), 307(a)(2) and 405(d) which is promulgated or approved after the permit is issued if that effluent or sludge standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant or sludge use or disposal practice not limited in the permit.

19. Privately Owned Treatment Works [R18-9-A905(A)(3)(d) which incorporates 40 CFR 122.44]

This section applies only to privately owned treatment works as defined at 40 CFR 122.2.

a. Materials authorized to be disposed of into the privately owned treatment works and collection system are typical domestic sewage. Unauthorized material are hazardous waste (as defined at 40 CFR Part 261), motor oil, gasoline, paints, varnishes, solvents, pesticides, fertilizers, industrial wastes, or other materials not generally associated with toilet flushing or personal hygiene, laundry, or food preparation, unless specifically listed under "Authorized Non-domestic Sewer Dischargers" elsewhere in this permit.

b. It is the Permittee's responsibility to inform users of the privately owned treatment works and collection system of the prohibition against unauthorized materials and to ensure compliance with the prohibition. The Permittee must have the authority and capability to sample all discharges to the collection system, including any from septic haulers or other unsewered dischargers, and shall take and analyze such samples for conventional, toxic, or hazardous pollutants when instructed by the permitting authority. The Permittee must provide adequate security to prevent unauthorized discharges to the collection system.

c. Should a user of the privately owned treatment works desire authorization to discharge non-domestic wastes, the Permittee shall submit a request for permit modification and an application, pursuant to 40 CFR 122.44(m), describing the proposed discharge. The application shall, to the extent possible, be submitted using ADEQ Forms 1 and 2C, unless another format is requested by the permitting authority. If the privately owned treatment works or collection system user is different from the Permittee, and the Permittee agrees to allow the non-domestic discharge, the user shall submit the application and the Permittee shall submit the permit modification request. The application and request for modification shall be submitted at least 6 months before authorization to discharge non-domestic wastes to the privately owned treatment works or collection system is desired.

20. Transfers by Modification [R18-9-B905]

Except as provided in section 21, a permit may be transferred by the Permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made under R18-9-B906, to identify the new Permittee and incorporate such other requirements as may be necessary.

21. Automatic Transfers [R18-9-B905]

An alternative to transfers under section 20, any AZPDES permit may be automatically transferred to a new Permittee if:

a. The current Permittee notifies the Director at least 30 days in advance of the proposed transfer date;

b. The notice includes a written agreement between the existing and new Permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

c. The Director does not notify the existing Permittee and the proposed new Permittee of his or her intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification under R18-9-B906(B).

22. Minor Modification of Permits [R18-9-B906(B)]

Upon the consent of the Permittee, the Director may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this section, without following public notice procedures under R18-9-A907 or A908. Minor modifications may only:

a. Correct typographical errors;

b. Update a permit condition that changed as a result of updating an Arizona water quality standard;

c. Require more frequent monitoring or reporting by the Permittee;

d. Change an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement;

e. Allow for a change in ownership or operational control of a facility where the Director determines that no other change in their permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittee has been submitted to the Director.

f. Change the construction schedule for a discharger which is a new source. No such change shall affect a discharger's obligation prior to discharge under 40 CFR 122.29 (which is incorporated by reference in R18-9-A905(A)(1)(e)).

g. Delete a point source outfall when the discharge from that outfall is terminated and does not

result in discharge of pollutants from other outfalls except in accordance with the permit limits.

h. Incorporate conditions of a POTW pretreatment program that has been approved in accordance with the procedures in 40 CFR 403.11 and 403.18 as enforceable conditions of the POTW's permit.

i. Annex an area by a municipality.

23. Termination of Permits [R-9-B906(C)]

The following are causes for terminating a permit during its term, or for denying a permit renewal application:

a. Noncompliance by the Permittee with any condition of the permit;

b. The Permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time;

c. A determination that the permitted activity endangers human health or the environment and can only by regulated to acceptable levels by permit modification or termination; or

d. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit (for example, a plant closure or termination of discharge by connection to a POTW).

24. Availability of Reports [Pursuant to A.R.S § 49-205]

Except for data determined to be confidential under A.R.S § 49-205(A), all reports prepared in accordance with the terms of this permit shall be available for public inspection at ADEQ offices. As required by A.R.S. § 49-205(B) and (C), permit applications, permits, and effluent data shall not be considered confidential.

25. Removed Substances [Pursuant to Clean Water Act Section 301]

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

26. Severability [Pursuant to A.R.S § 49-324(E)]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and remainder of this permit, shall not be affected thereby.

27. Civil and Criminal Liability [Pursuant to A.R.S § 49-262, 263.01, and 263.02]

Except as provided in permit conditions on "Bypass" (Section 14) and "Upset" (Section 15), nothing

in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

28. Oil and Hazardous Substance Liability [Pursuant to Clean Water Act Section 311]

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under Section 311 of the Clean Water Act.

29. State or Tribal Law [Pursuant to R18-9-A904(C)]

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any applicable State or Tribal law or regulation under authority preserved by Section 510 of the Clean Water Act.

APPENDIX A PART A: ACRONYMS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADHS	Arizona Department of Health Services
AZPDES	Arizona Pollutant Discharge Elimination System
A.R.S.	Arizona Revised Statutes
CAFO	Concentrated Animal Feeding Operation
CFR	Code of Federal Regulations
Director	The Director of ADEQ or any authorized representative thereof
DMR	Discharge Monitoring Report
EPA	The U.S. Environmental Protection Agency
kg/day	kilograms per day
mg/L	milligrams per liter
NPDES	National Pollutant Discharge Elimination System
QA	Quality Assurance

APPENDIX A PART B: DEFINITIONS

AGRICULTURAL STORMWATER DISCHARGE means a precipitation-related discharge of manure, litter or process wastewater from land areas under the control of a CAFO when the person who owns or operates the CAFO has applied the manure, litter or process wastewater according to site-specific nutrient management practices to ensure appropriate agricultural use of the nutrients in the manure, litter or process wastewater, as specified under 40 CFR 122.42(e)(1)(vi)- (ix).

ANIMAL CONFINEMENT AREA means any part of an animal feeding operation where animals are restricted or confined including open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables.

ANIMAL FEEDING OPERATION means a lot or facility (other than an aquatic animal production facility) where the following conditions are met:

a. Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and
b. Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

CAFO means any large concentrated animal feeding operation, medium concentrated animal feeding operation, or animal feeding operation designated under R18-9-D901.

LARGE CONCENTRATED ANIMAL FEEDING OPERATION means an animal feeding operation that stables or confines at least the number of animals specified in any of the following categories:

a. 700 mature dairy cows, whether milked or dry;
b. 1,000 veal calves;
c. 1,000 cattle other than mature dairy cows or veal calves. Cattle includes heifers, steers, bulls, and cow and calf pairs;
d. 2,500 swine each weighing 55 pounds or more;
e. 10,000 swine each weighing less than 55 pounds;

f. 500 horses;
g. 10,000 sheep or lambs;
h. 55,000 turkeys;
i. 30,000 laying hens or broilers, if the animal feeding operation uses a liquid manure handling system;
j. 125,000 chickens (other than laying hens), if the animal feeding operation uses other than a liquid manure handling system;
k. 82,000 laying hens, if the animal feeding operation uses other than a liquid manure handling system;
l. 30,000 ducks, if the animal feeding operation uses other than a liquid manure handling system; or
m. 5,000 ducks, if the animal feeding operation uses a liquid manure handling system.

LAND APPLICATION AREA means land under the control of an animal feeding operation owner or operator, whether it is owned, rented, or leased, to which manure, litter, or process wastewater from the production area is or may be applied.

MANURE means any waste or material mixed with waste from an animal including manure, bedding, compost and raw materials, or other materials commingled with manure or set aside for disposal.

MANURE STORAGE AREA means any part of an animal feeding operation where manure is stored or retained including lagoons, run-off ponds, storage sheds, stockpiles, under-house or pit storages, liquid impoundments, static piles, and composting piles.

POLLUTANT means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water. It does not mean:

a. Sewage from vessels; or
b. Water, gas, or other material that is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of this state, and if the state determines that the injection or disposal will not result in the degradation of ground or surface water resources. (40 CFR 122.2)

PROCESS WASTEWATER means any water that comes into contact with a raw material, product, or byproduct including manure, litter, feed, milk, eggs, or bedding and water directly or indirectly used in the operation of an animal feeding operation for any or all of the following:

a. Spillage or overflow from animal or poultry watering systems;
b. Washing, cleaning, or flushing pens, barns, manure pits, or other animal feeding operation facilities;
c. Direct contact swimming, washing, or spray cooling of animals; or
d. Dust control.

PRODUCTION AREA means the animal confinement area, manure storage area, raw materials storage area, and waste containment areas. Production area includes any egg washing or egg processing facility and any area used in the storage, handling, treatment, or disposal of animal mortalities.
Raw materials storage area" means the part of an animal feeding operation where raw materials are stored including feed silos, silage bunkers, and bedding materials.

REALISTIC YIELD GOAL is the crop yield that the producer expects to achieve 50% of the time based on soil productivity information, historical yield data, climatic conditions, level of management and/or local research on similar soil, cropping systems, and soil and manure/organic byproducts tests.

SUBSTANTIAL CHANGES to a nutrient management plan include, but are not limited to:

a. Addition of new land application areas not previously included in the NMP,
b. Any changes to the field-specific maximum annual rates for land application and to the maximum amounts of nitrogen and phosphorus derived from all sources for each crop,

c. Addition of any crop or other uses not included in the terms of the NMP and corresponding field-specific rates of application, and
d. Changes to site-specific components of the NMP, where such changes are likely to increase the risk of nitrogen and phosphorus transport to waters of the U.S.

WASTE CONTAINMENT AREA means any part of an animal feeding operation where waste is stored or contained including settling basins and areas within berms and diversions that separate uncontaminated stormwater.

RUNOFF means rainwater, leachate, or other liquid that drains over any part of a land surface and runs off of the land surface.

APPENDIX B – Application Worksheets

Field Data for 2017 Crop Year

Field	Total Acres	Date	0-12" Soil Test NO_3 (ppm)	12-24" Soil Test NO_3 (ppm)	0-12" Org Matr %	0-12" Soil Test P (ppm)	0-12" Soil Test K (ppm)	Crop
1	125	12/27/16	5	5	0.7	54	199	Alfalfa
2	34	12/27/16	7	8	0.6	88	156	Alfalfa

Total- 159

Total Plant N Req'mt[1]	Soil N Credit[2]	Commercial N Credit[3]	N to Apply[4] (#/acre)	N to Apply (#)	MR[5]	VR[6]	P2O5 App Goal[7]	K2O App Goal
749	18	0	731	91,425	0.52	0.40	0	0
749	25	0	724	24,623	0.52	0.40	0	0

Total- 116,048

[1]Total Plant N Requirement- (Crop 1 yield x historical per unit crop N removal) + (Crop 2 yield x historical per unit crop N removal) + (Grazing removal (20#N/100#gal)

[2]Soil N Credit= NO_3 N (ppm) in the 8-12 in soil sample x .3 (convert ppm to lbs) x 12 in

[3]Commercial N Credit – Actual commercial N lbs/ac applied including any commercial starter fertilizer

[4]N to Apply= Total Plant N Req'mt – (Commercial + Soil N Credit(s))

[5]MR- Mineralization Rate – Bulletin 568A, BMP's for Manure Utilization, Table 9 & 10, pg. 15, Colorado State University Cooperative Extension. 1999

[6]Volatilization Rate (.4 used for flood irrigation) – Bulletin 568A, BMP's for Manure Utilization, Table 9 & 10, pg. 15. Colorado State University Cooperative Extension. 1999

[7]P2O5 Application Goal will remain unused unless determined by the phosphorus index that a phosphorus based application rate is required.

PAN in effluent = $MR*(TKN - NH_4) + (1 + VR)*NH_4$

Cropping Plans- Crop 1

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note
1	125	Alfalfa	10	74.94		12
2	34	Alfalfa	10	74.94		12

Cropping Plans- Crop 2

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note	Grazing Gain Goal (gain/100 wt)	Plant N Req'mt (#/100 wt)	Plant N Req'mt (#/ac)
1	125	None	0			0		0	749
2	34	None	0			0		0	749

Estimated Removal

Field	Total N Removal (#/ac)	Total P2O5 Removal (#/ac)	Total K20 Removal (#/ac)
1	93,675	20,413	0
2	24,480	1,037	0

Crop Removal Data

Crop	Yield Unit (bu, tons, etc.)	N Requirement (lbs./yield unit)	P_2O_5 Requirement (lbs./yield unit)	Information Source
Grain - Barley	bu	1.3 lb./bu	0.86 lb./bu	Servi-Tech Laboratory Crop Files
Grain - Canola	bu	1.8 lb./bu	0.86 lb./bu	Servi-Tech Laboratory Crop Files
Grain - Corn	bu	1.3 lb./bu	0.65 lb./bu	Servi-Tech Laboratory Crop Files
Grain - Sorghum	bu	1.18 lb./bu	0.4 lb./bu	Plant Tissue Analysis**
Grain - Soybean	bu	3.46 lb./bu	0.78 lb./bu	Servi-Tech Crop Files
Grain - Sunflower	lbs./acre	0.05 lb./lb.	0.018 lb./lb.	ServiTech Laboratory Crop Files
Grain - Wheat	bu	1.58 lb./bu	0.49	Plant Tissue Analysis**
Grazing – Forage Sorghum	pounds	20 lb./100 # gain	1.6 lb./100 # gain	2001 Oklahoma State University Trial
Grazing – Native Grass	pounds	20 lb./100 # gain	1.6 lb./100 # gain	2001 Oklahoma State University Trial
Grazing – Small Grain	pounds	20 lb./100 # gain	1.6 lb./100 # gain	2001 Oklahoma State University Trial
Hay - Alfalfa	tons	74.94 lb./ton	16.33 lb./ton	Plant Tissue Analysis*
Hay – Native Grass	tons	27 lb./ton	20 lb./ton	ServiTech Laboratory Crop Files
Hay - Oat	tons	45.3 lb./ton	13.7 lb./ton	Plant Tissue Analysis**

Hay – Small Grain	tons	39.06 lb./ton	10.35 lb./ton	Plant Tissue Analysis**
Hay - Sorghum	tons	70.4 lb./ton	16.12 lb./ton	Plant Tissue Analysis*
Silage – Alfalfa	tons	24.68 lb./ton	4.23 lb./ton	Plant Tissue Analysis**
Silage – Corn	tons	7.73 lb./ton	3.22 lb./ton	Plant Tissue Analysis*
Silage – Small Grain	tons	18.13 lb./ton	4.40 lb./ton	Plant Tissue Analysis**
Silage - Sorghum	tons	9.59 lb./ton	3.05 lb./ton	Plant Tissue Analysis**
Stover – Corn	tons	15.3 lb./ton	4.9 lb./ton	ServiTech Laboratory Crop Files
Stover – Small Grain	tons	11.6 lb./ton	2.9 lb./ton	ServiTech Laboratory Crop Files
Fallow	N/A	None	None	N/A

*JBS Five Rivers Cattle Feeding LLC – McElhaney Feedyard specific removal data

**JBS Five Rivers Cattle Feeding LLC (JBS Five Rivers) sample crops harvested on land management units fertilized with manure or effluent. The sample results are entered into the crop nutrient removal data set for each feedyard to determine the nutrients removed in the harvested crops. Since yield and nutrient removal are highly influenced by climatic and environmental conditions, the average of all years of representative data is used. JBS Five Rivers uses the feedyard specific crop removal data, where available, as the crop nutrient requirement in subsequent year's nutrient management planning. When feedyard specific crop removal data is not available, crop removal data from other JBS Five Rivers feedyards, land grant university crop nutrient recommendations, Sevi-Tech Laboratories Crop Fila data, or other suitable sources are used to calculate crop nutrient requirements.

Field Data for 2018 Crop Year

Field	Total Acres	Date	0-12" Soil Test NO_3 (ppm)	12-24" Soil Test NO_3 (ppm)	0-12" Org Matr %	0-12" Soil Test P (ppm)	0-12" Soil Test K (ppm)	Crop
1	124	1/25/12						Alfalfa
2	34	1/25/12						Alfalfa

Total 158

Total Plant N Req'mt[1]	Soil N Credit[2]	Commercial N Credit[3]	N to Apply[4] (#/acre)	N to Apply (#)	MR[5]	VR[6]	P2O5 App Goal[7]	K2O App Goal
749	0	0	0	0	0.52	0.40	0	0
749	0	0	0	0	0.52	0.40	0	0

Total- 0

[1]Total Plant N Requirement- (Crop 1 yield x historical per unit crop N removal) + (Crop 2 yield x historical per unit crop N removal) + (Grazing removal (20#N/100#gal)

[2]Soil N Credit= NO_3 N (ppm) in the 8-12 in soil sample x .3 (convert ppm to lbs) x 12 in

[3]Commercial N Credit – Actual commercial N lbs/ac applied including any commercial starter fertilizer

[4]N to Apply= Total Plant N Req'mt – (Commercial + Soil N Credit(s))

[5]MR- Mineralization Rate – Bulletin 568A, BMP's for Manure Utilization, Table 9 & 10, pg. 15, Colorado State University Cooperative Extension. 1999

[6]Volatilization Rate (.4 used for flood irrigation) – Bulletin 568A, BMP's for Manure Utilization, Table 9 & 10, pg. 15. Colorado State University Cooperative Extension. 1999

[7]P2O5 Application Goal will remain unused unless determined by the phosphorus index that a phosphorus based application rate is required.

PAN in effluent = $MR*(TKN - NH_4) + (1 + VR)*NH_4$

Cropping Plans- Crop 1

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note
1	125	Alfalfa	10	74.94		12
2	34	Alfalfa	10	74.94		12

Cropping Plans- Crop 2

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note	Grazing Gain Goal (gain/100 wt)	Plant N Req'mt (#/100 wt)	Plant N Req'mt (#/ac)
1	125	None	0	0		0		0	749
2	34	None	0	0		0		0	749

Estimated Removal

Field	Total N Removal (#/ac)	Total P2O5 Removal (#/ac)	Total K20 Removal (#/ac)
1	93,675	20,413	0
2	24,480	1,037	0

Field Data for 2019 Crop Year

Field	Total Acres	Date	0-12" Soil Test NO_3 (ppm)	12-24" Soil Test NO_3 (ppm)	0-12" Org Matr %	0-12" Soil Test P (ppm)	0-12" Soil Test K (ppm)	Crop
1	124	1/25/12						Alfalfa
2	34	1/25/12						Alfalfa

Total- 158

Total Plant N Req'mt[1]	Soil N Credit[2]	Commercial N Credit[3]	N to Apply[4] (#/acre)	N to Apply (#)	MR[5]	VR[6]	P2O5 App Goal[7]	K2O App Goal
749					0.52	0.40	0	0
749					0.52	0.40	0	0

Total- 0

[1]Total Plant N Requirement- (Crop 1 yield x historical per unit crop N removal) + (Crop 2 yield x historical per unit crop N removal) + (Grazing removal (20#N/100#gal)

[2]Soil N Credit= NO_3 N (ppm) in the 8-12 in soil sample x .3 (convert ppm to lbs) x 12 in

[3]Commercial N Credit – Actual commercial N lbs/ac applied including any commercial starter fertilizer

[4]N to Apply= Total Plant N Req'mt – (Commercial + Soil N Credit(s))

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[6]Volatilization Rate (.4 used for flood irrigation) – Bulletin 568A, BMP's for Manure Utilization, Table 9 & 10, pg. 15. Colorado State University Cooperative Extension. 1999

[7]P2O5 Application Goal will remain unused unless determined by the phosphorus index that a phosphorus based application rate is required.

PAN in effluent = MR*(TKN – NH_4) + (1 + VR)*NH_4

Cropping Plans- Crop 1

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note
1	125	Alfalfa	10	74.94		12
2	34	Alfalfa	10	74.94		12

Cropping Plans- Crop 2

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note	Grazing Gain Goal (gain/100 wt)	Plant N Req'mt (#/100 wt)	Plant N Req'mt (#/ac)
1	125	None	0	0		0		0	749
2	34	None	0	0		0		0	749

Estimated Removal

Field	Total N Removal (#/ac)	Total P2O5 Removal (#/ac)	Total K20 Removal (#/ac)
1	93,675	20,413	0
2	24,480	1,037	0

Field Data for 2020 Crop Year

Field	Total Acres	Date	0-12" Soil Test NO_3 (ppm)	12-24" Soil Test NO_3 (ppm)	0-12" Org Matr %	0-12" Soil Test P (ppm)	0-12" Soil Test K (ppm)	Crop
1	124	1/25/12						Alfalfa
2	34	1/25/12						Alfalfa

Total- 158

Total Plant N Req'mt[1]	Soil N Credit[2]	Commercial N Credit[3]	N to Apply[4] (#/acre)	N to Apply (#)	MR[5]	VR[6]	P2O5 App Goal[7]	K2O App Goal
749					0.52	0.40	0	0
749					0.52	0.40	0	0

Total- 0

[1]Total Plant N Requirement- (Crop 1 yield x historical per unit crop N removal) + (Crop 2 yield x historical per unit crop N removal) + (Grazing removal (20#N/100#gal)

[2]Soil N Credit= NO_3 N (ppm) in the 8-12 in soil sample x .3 (convert ppm to lbs) x 12 in

[3]Commercial N Credit – Actual commercial N lbs/ac applied including any commercial starter fertilizer

[4]N to Apply= Total Plant N Req'mt – (Commercial + Soil N Credit(s))

[5]MR- Mineralization Rate – Bulletin 568A, BMP's for Manure Utilization, Table 9 & 10, pg. 15, Colorado State University Cooperative Extension. 1999

[6]Volatilization Rate (.4 used for flood irrigation) – Bulletin 568A, BMP's for Manure Utilization, Table 9 & 10, pg. 15. Colorado State University Cooperative Extension. 1999

[7]P2O5 Application Goal will remain unused unless determined by the phosphorus index that a phosphorus based application rate is required.

PAN in effluent = MR*(TKN – NH_4) + (1 + VR)*NH_4

Cropping Plans- Crop 1

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note
1	125	Alfalfa	10	74.94		12
2	34	Alfalfa	10	74.94		12

Cropping Plans- Crop 2

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note	Grazing Gain Goal (gain/100 wt)	Plant N Req'mt (#/100 wt)	Plant N Req'mt (#/ac)
1	125	None	0	0		0		0	749
2	34	None	0	0		0		0	749

Estimated Removal

Field	Total N Removal (#/ac)	Total P2O5 Removal (#/ac)	Total K20 Removal (#/ac)
1	93,675	20,413	0
2	24,480	1,037	0

Field Data for 2021 Crop Year

Field	Total Acres	Date	0-12" Soil Test NO_3 (ppm)	12-24" Soil Test NO_3 (ppm)	0-12" Org Matr %	0-12" Soil Test P (ppm)	0-12" Soil Test K (ppm)	Crop
1	124	1/25/12						Alfalfa
2	34	1/25/12						Alfalfa

Total- 158

Total Plant N Req'mt[1]	Soil N Credit[2]	Commercial N Credit[3]	N to Apply[4] (#/acre)	N to Apply (#)	MR[5]	VR[6]	P2O5 App Goal[7]	K2O App Goal
749					0.52	0.40	0	0
749					0.52	0.40	0	0

Total- 0

[1]Total Plant N Requirement- (Crop 1 yield x historical per unit crop N removal) + (Crop 2 yield x historical per unit crop N removal) + (Grazing removal (20#N/100#gal)

[2]Soil N Credit= NO_3 N (ppm) in the 8-12 in soil sample x .3 (convert ppm to lbs) x 12 in

[3]Commercial N Credit – Actual commercial N lbs/ac applied including any commercial starter fertilizer

[4]N to Apply= Total Plant N Req'mt – (Commercial + Soil N Credit(s))

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[7]P2O5 Application Goal will remain unused unless determined by the phosphorus index that a phosphorus based application rate is required.

PAN in effluent = $MR*(TKN - NH_4) + (1 + VR)*NH_4$

Cropping Plans- Crop 1

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note
1	125	Alfalfa	10	74.94		12
2	34	Alfalfa	10	74.94		12

Cropping Plans- Crop 2

Field	Acres	Crop	Yield Goal (T. bu/ac)	Plant N Req'mt (#/ac/T.bu)	Starter N Fretilizer (#/ac)	Note	Grazing Gain Goal (gain/100 wt)	Plant N Req'mt (#/100 wt)	Plant N Req'mt (#/ac)
1	125	None	0	0		0		0	749
2	34	None	0	0		0		0	749

Estimated Removal

Field	Total N Removal (#/ac)	Total P2O5 Removal (#/ac)	Total K20 Removal (#/ac)
1	93,675	20,413	0
2	24,480	1,037	0